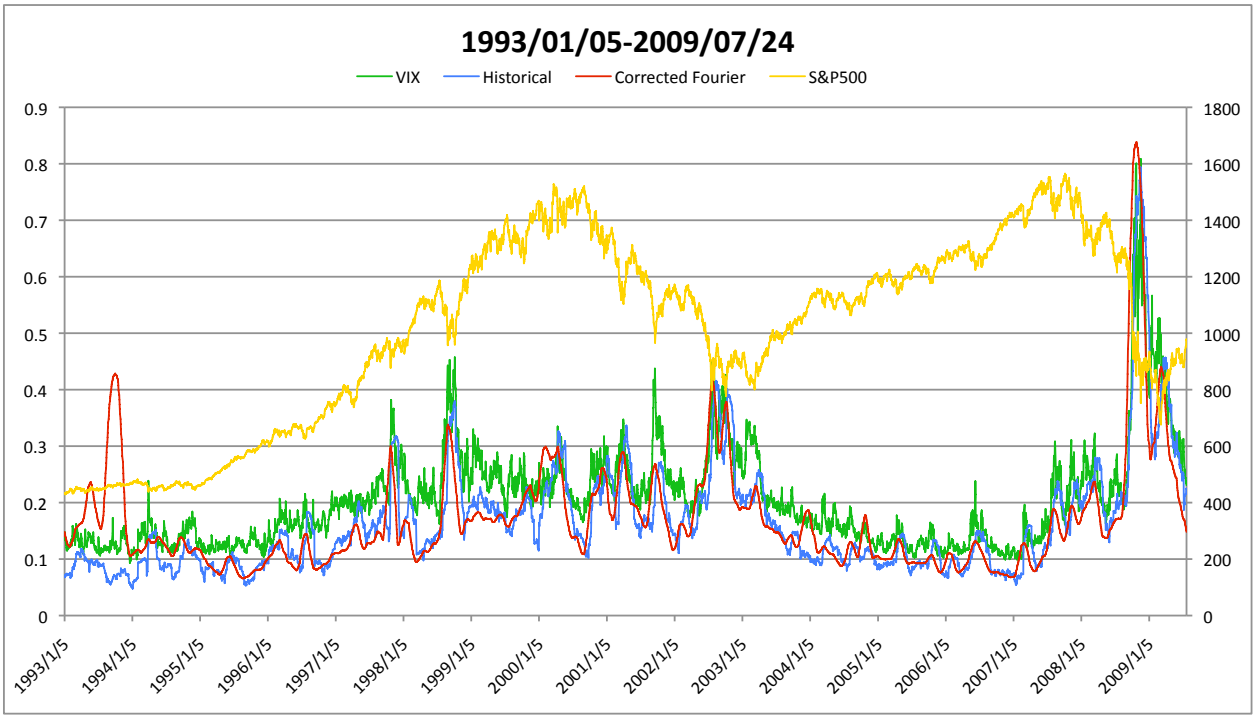
SPECIAL TOPICS ON VOLATILITY

Fall Semester, 2010



Instructor: Dr. Chuan-Hsiang Han

Class Hours: Monday 9AM-12AM

Understanding the behaviour of volatility and its implication on financial decisions are two studying vortes in this course. One part of this course will address some cutting-edge methods to estimate instantaneous volatility and correlation by Fourier transform method and/or Markov chain Monte Carlo (MCMC). The other part of this course will address some applications of estimated volatility/correlation. As a whole, we plan to investigate the following subjects: local volatility models, multifactor stochastic volatility models, regime switching models, hedging performance, risk measurement, model calibration, volatility risk premium analysis, variance/volatility derivatives, portfolio selection, credit risk applications, and cross market analysis, etc.

Research papers and practitioners' reports will be distributed in this course. Two main references are highly recommended:

1. R. Engle, Anticipating correlations: a new paradigm for risk management, Princeton University Press, 2009.
2. G. Gatheral, The Volatility Surfaces: A Practitioner's Guide, Wiley, 2006.

prerequisite: experiences of stochastic calculus and financial derivatives theory.

Grade policy: project oriented. Midterm Project 50% and Final Project: 50%.

All other information can be found on http:mx.nthu.edu.tw/~chhan/teach.html